



Oculum Ensaios

ISSN: 1519-7727

sbi.ne_oculumensaios@puc-
campinas.edu.br

Pontifícia Universidade Católica de
Campinas
Brasil

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Italian immigration in southern Brazil: Reproduction and innovation in the layout of rural
houses through the space syntax theory
Oculum Ensaios, vol. 13, núm. 1, enero-junio, 2016, pp. 71-90
Pontifícia Universidade Católica de Campinas
Campinas, Brasil

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ITALIAN IMMIGRATION IN SOUTHERN BRAZIL: REPRODUCTION AND INNOVATION IN THE LAYOUT OF RURAL HOUSES THROUGH THE SPACE SYNTAX THEORY

*IMIGRAÇÃO ITALIANA NO SUL DO BRASIL: REPRODUÇÃO E INOVAÇÃO EM LEIAUTES
DE CASAS RURAIS PELA TEORIA DA SINTAXE ESPACIAL | INMIGRACIÓN ITALIANA EN
EL SUR DE BRASIL: REPRODUCCIÓN Y INNOVACIÓN EN LOS DISEÑOS DE CASAS RURALES
A TRAVÉS DE LA TEORÍA DE SINTAXIS DEL ESPACIO*

ELIO TRUSIANI, DÉCIO RIGATTI

ABSTRACT

The structure of a sample of rural houses built by Italian immigrants in Southern Brazil from the last quarter of the 19th century onwards and a sample of Italian rural houses were analyzed using the space syntax theory and techniques. The samples were analyzed to identify key differences in the house genotypes. The main goal of the article is to compare the results regarding the Brazilian sample of houses with the Italian sample of rural houses from the regions of Veneto and Trentino Alto-Adige, where most of the families that had moved to Southern Brazil came from. Therefore, it will be possible to evaluate whether or not, and to which extent, the Italian immigrants reproduced in Brazil the Italian house structures they used to live in and, more importantly, the relationship between the spatial structure of the houses built in Brazil and the patriarchal social structure that governed the entire society at that time. We inferred so far that the main genotype found in the Italian sample corresponds to the genotype produced in Brazil, a time when the houses were organized around the daily life of the families and suited the prevailing patriarchal social structure. In the Brazilian case, liminal events and a more flexible house plan are able to introduce differences in the way the same house can function, depending on how strangers are admitted into the houses on liminal occasions and in the daily life of the families. In Italy, this kind of flexibility is not found. There are two main hypotheses regarding this aspect: the first one is that the immigrants tend to reproduce the structure of the houses as experienced in Italy but, at the same time, they tend to introduce in Brazil a new typology of houses based on the flexibility of the house plan that is relatively autonomous from their spatial experience in Italy.

KEYWORDS: Domestic space. Rural houses. Italian immigration in Brazil.

RESUMO

A análise de amostras de casas rurais, construídas por imigrantes italianos no Sul do Brasil a partir da segunda metade do século XIX, foi feita utilizando-se de teoria e técnicas de sintaxe espacial. As amostras foram avaliadas para permitir a identificação de diferenças fundamentais nos genótipos das casas. O objetivo deste trabalho é comparar os resultados apresentados por essas amostras de casas rurais brasileiras com os de casas italianas das regiões do Veneto e do Trentino-Alto-Adige, local de proveniência da maioria das famílias de imigrantes que se instalaram no Sul do Brasil. Assim, seria possível avaliar se e em que medida os imigrantes italianos reproduzem no Brasil a estrutura das casas em que costumavam viver na Itália e, mais importante, qual é a tradução feita para o Brasil no que diz respeito às relações entre a estrutura das casas aqui construídas e o sistema patriarcal o qual organizava a sociedade da época. É possível inferir até agora que o principal genótipo encontrado na amostra italiana corresponde ao produzido no Brasil, quando as casas são organizadas para a vida cotidiana das famílias e adequadas à estrutura social patriarcal prevalente entre os imigrantes italianos. No caso brasileiro, ritos de passagem e uma planta mais flexível são capazes de produzir diferenças nos modos como a mesma casa pode funcionar, dependendo de como os estranhos são admitidos nesses ritos de passagem e na vida cotidiana das famílias. Na Itália, essa flexibilidade jamais é encontrada. Há duas hipóteses principais sobre a questão: a primeira, é que os imigrantes tendem a reproduzir a estrutura das casas de suas experiências na Itália, mas, ao mesmo tempo, tendem a introduzir, no Brasil, uma nova tipologia de moradias baseada na flexibilidade da planta, sendo esta relativamente autônoma com relação à experiência espacial na Itália.

PALAVRAS-CHAVE: Espaço doméstico. Habitação rural. Imigração italiana no Brasil.

RESUMEN

Mediante el uso de técnicas y teoría de sintaxis espacial, se analizó una muestra de casas construidas por inmigrantes italianos en el sur de Brasil a partir de la segunda mitad del siglo XIX. Las muestras fueron evaluadas con el fin de permitir la identificación de las diferencias clave en los genotipos de las casas. El objetivo de este estudio es comparar los resultados presentados por las muestras de las moradas brasileñas e italianas de las regiones de Veneto y Trentino-Alto-Adige, origen de la mayoría de las familias de inmigrantes que se establecieron en el sur de. Así, es posible evaluar si, y en qué medida, los inmigrantes italianos en Brasil reproducen la estructura de las casas donde solían vivir en Italia y, más importante, cuál es la traducción hecha en Brasil en términos de la relación entre la estructura espacial de las casas construidas aquí y la estructura social patriarcal que rige a toda la sociedad en ese momento. Lo que es posible considerar hasta ahora es que el genotipo principal encontrado en la muestra italiana corresponde al genotipo producido en Brasil, cuando las casas se organizan para la vida cotidiana de las familias

y se adecuan a la estructura social patriarcal, prevalente entre los inmigrantes. En Brasil, los ritos de paso y una planta más flexible producen diferencias en las formas como la misma casa puede funcionar, dependiendo de cómo los extranjeros son admitidos en los hogares en estos ritos de paso y en la vida cotidiana de las familias. En Italia esta flexibilidad jamás se encuentra. Hay dos hipótesis principales de este tema: la primera es que los inmigrantes tienden a reproducir la estructura de las casas de sus experiencias en Italia; pero al mismo tiempo, tienden a introducir en Brasil un nuevo tipo de vivienda basado en la flexibilidad de la planta y que es relativamente independiente de su experiencia espacial en Italia.

PALABRAS CLAVE: *Espacio doméstico. Casas rurales. Inmigración italiana en Brasil.*

INTRODUCTION

The occupation of part of the state of *Rio Grande do Sul* in the late 19th century by Italian immigrants was due to vacant land in the South region of Brazil and the need to introduce free labor, following international pressures to stop slavery. This was the opportunity to ease problems in rural areas of Italy, particularly in the Northern regions, which were facing difficulties that could not be solved after the Italian Unification in 1870.

In Brazil, as soon as the initial problems related to the beginning of production were overcome, it was possible to invest work and money in the construction of permanent houses, better fit for the family needs.

The small area of rural plots allowed the structuring of quite a dense community, with interactions that took place around churches and chapels and, occasionally, in the family houses. Religious unity provided the necessary support for a collective life in a strange land through religious celebrations. An important part of sociality took place in the houses themselves, especially through rites of passage that followed the life of the people from birth to death. The houses were a place for the production and reproduction of social practices within the family and community. Rites of passage such as births, engagements, marriages and funerals marked the relationships among families, neighbours and strangers, structuring the socialization within the community. During these rites, the presence of strangers and neighbours was welcome, not only to share celebrations or mourning, but also as an important way of transmitting and controlling social life as a whole.

Temporal liminalities and rites of passage were important for the families because these were times when the houses could welcome strangers to show them who the family was, how they managed to overcome difficult times, and to share their values.

For the members of an immigrant community that was structured *ex-nihilo*, these collective events represented times of social exchanges and cultural constructions. As Turner (1969) points out when considering the aggregation phase of rites of passage in the social experience:

The ritual subject, individual or corporate, is in a relatively stable stage once more and, by virtue of this, has rights and obligations vis-à-vis others of a clearly defined and 'structural' type; he is expected to behave in accordance with certain customary norms and ethical standards binding on incumbents of social position in a system of such positions (TURNER, 1969, p.359).

Rites of passage tend to unify people at this stage as well as weaken the forms of control. The opening of the houses on these occasions corresponds to a moment when the usual daily order and the pre-existing control structure are minimized.

Trubshaw states that when "looking more broadly at ritual events [...] there is at least a moment when the participants are between normal ordered cultural states. This raises the possibility of standing aside from social positions [...]" (TRUBSHAW, 2000, p.2). Nevertheless, the time of the ritual events as well as the rites are controlled.

In the house of an Italian immigrant, the opening or closing of the house to strangers temporarily rearranges the space. When the rite of passage is over, the space returns to its former and daily structure, which is subverted on liminal occasions. This discontinuity is, therefore, transient and both the spatial and social flexibilities are only relative, once only behaviours related to the specific rite are accepted. The way Italian immigrants in Brazil used to structure their domestic space allowed to control the social use of space during rites of passage and return it to the family life, which was strongly based on a patriarchal system, requiring the control of space itself in order to be effective.

The patriarchal system was based on the authority of the father, who ruled the family with an almost absolute power over the family members. The structure of the domestic space required specific attributes to ensure that the space itself could be an instrument of control and authority of the patriarch over the family members and strangers.

Accesses to/from the exterior and the internal spatial relations were used to produce and reinforce the family organization, the relative position of their members and mediate how the entire spatial relations were controlled by the master of the house.

Based on these premises, the aim of this paper is to investigate how the houses of the first Italian immigrants in Southern Brazil were structured for the daily life and ritual events. We compared a sample of Italian rural houses from Veneto and Trentino Alto-Adige regions. Thus, it is possible to evaluate how and to which extent the houses built in Brazil reproduce the Italian matrices and if and how innovations were introduced in the house structure in terms of their genotypes.

METHODS

The comparative analyses of samples of Italian and Brazilian rural houses will be made by using space syntax techniques, particularly through graph analysis that allows the identification of space typology and genotypic families that structure the domestic space.

Two main and complementary concepts are used: a) spatial integration, which deals with the relative position of every room in the composition and their roles in the family life; b) space typology, which evaluates the main aspects of domestic space organization in terms of occupation and movement in housing layouts (HILLIER, 1996).

The house plans were used as the main source of data to draw the justified graphs, which are the means to calculate the integration values of every room and house.

In Figure 1 the reasoning is illustrated, with the house plan of the building on the left, and the correspondent graph on the right:

Spaces 'a' and 'b' are somehow related to the exterior space 'c', and the role of each space depends on its relative position regarding all others and the different house plans shown in the figure mean differentiations in the way all spaces control all the others and, therefore, represent different ways of controlling social interactions.

By analyzing a number of buildings using this technique, it was possible to identify the structures of the families — or genotypes — linking morphology and social use of space.

A genotype in buildings can be defined in terms of associations between labels of spaces and differentiations in how those spaces relate to the complex as a whole [...] genotypes will be the result of relations of inhabitants with inhabitants and inhabitants with visitors" (HILLIER & HANSON, 1984. p.154).

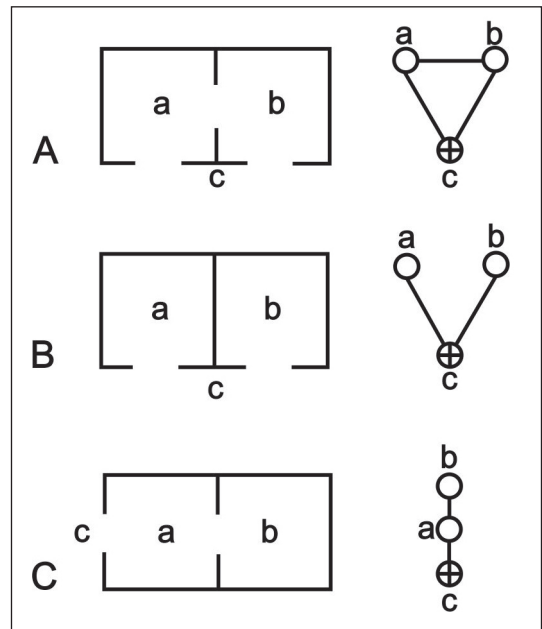


FIGURE 1 – House plans and respective graphs.

Source: Hillier and Hanson (1984. p.148).

The interface between inhabitants and strangers are the main social generators of buildings (HANSON, 1998).

Integration is a function of depth from every space to all others and depth here is taken as the number of different rooms required to pass from one room to the other in a building.

Understanding the use of every room is important to grasp the logic of space organization and its relations to social behaviour in space. Regularities or differences presented in a group of buildings can define the structures of the families or genotypes.

Integration has emerged in empirical studies as one of the fundamental ways in which houses convey culture through their configurations. [...] different functions or activities were systematically assigned to spaces which integrated the dwellings

to differing degrees. Function thus acquired a spatial expression which could also be assigned a numerical value. Where these numerical differences were in a consistent order across a sample of plans from a region, society or ethnic grouping, then we could say that a cultural pattern existed, one which could be detected in the configuration itself rather than in the way in which it was interpreted by minds. We called this particular type of numerical consistency in spatial patterning a house 'genotype' (HANSON, 1998, p.32).

Depending on the relative position and use of the rooms of a building they may be associated with two aspects that can occur in space: occupation and movement.

Occupation means the use of space for activities which are at least partly and often largely static, such as conversing, meeting, reading, eating or sleeping, or at most involve movement which, when traced over a period, remains localised within the occupied space [...] (HILLIER, 1996. p.317).

Movement can be defined [...] as movement between spaces of occupation, or moving in and out of a complex of such places. Movement is primarily about the relation between spaces rather than the spaces themselves [...] (HILLIER, 1996. p. 317). Occupation is concerned with the convex properties of space while movement is primarily axial.

In order to evaluate different potential spaces for occupation or movement we can use the concept of space typology in graphs (HILLIER, 1996). Hillier identifies four different types of spaces, summarized in Table 1.

Space typology is important because it is related to the depth-minimizing and maximizing process and therefore the construction of the spatial integration.

TABLE 1 – Space typology in graphs.

Space typology	Types of spaces and their features
<p>The diagram shows a network of nodes (circles) connected by lines. Node 'a' is at the top, connected to 'b'. 'b' is connected to 'c'. There are two 'c' nodes, one connected to 'b' and another connected to a 'd' node. This 'd' node is part of a ring structure with another 'd' node and a 'c' node. A third 'd' node is at the bottom, connected to two 'c' nodes, one of which is also connected to the 'd' node in the ring above.</p>	<p>a-type: dead end spaces; best suited for occupation;</p> <p>b-type: part of sequence of spaces; tree-like structure; movement is only from/to specific space or sequence of spaces;</p> <p>c-type: part of a single ring; limited choice of movement.</p> <p>d-type: part of at least two rings and a common space of the rings; choice of movement; best suited for movement.</p>

Source: Based on Hillier (1996. p.318-319).

THE ITALIAN SAMPLE

The Italian sample consisted of field survey and bibliographic sources, particularly from Migliorini and Cucagna (1969) for houses in the area of Belluno¹ and the author Barbieri (1962) for houses in the Trentino area². Differently to what happens in Brazil, isolated rural houses in Italy are quite rare — fewer than 8-10% — and most houses were built as small villages sparing the land for sowing, as the rural plots tended to be quite small (BARBIERI, 1962). There is dissociation between the land for production and the area where the house was built. The field survey showed that due to the historically small number of isolated houses, together with a process of restructuring overtime, the bibliographic sources were more consistent for the analysis in this paper, once it made possible to work with a sample of original rural houses, without the modernization that characterizes these houses nowadays, which tends to change the housing layouts. Therefore, most of the houses provided by the field survey³ had to be discarded and a sample of houses taken from bibliographic sources was privileged.

Another difference presented in the Italian sample was the so-called 'unitary house', meaning that the same building housed the family and the '*rustico*', where animals are kept and hay and other stuff are stored. In the *trentino* area this type of house is called '*italica*' house (BARBIERI, 1962, p.17). In Brazil, the house is exclusively used to shelter the family, with the exception of the cellar, where wine and food are stored, which is a part of the house. Animals and other goods were kept in different buildings, separated from the house but within a surveillance distance. This type of house in Italy is called '*maso*' (BARBIERI, 1962, p.37).

Within the Italian sample, one of the main typological differences is that the activities belonging to the '*rustico*' tend to be juxtaposed to the house in the area of Belluno and on different floors in the '*trentino*'.

Figure 2 shows the house plans of the Italian sample and Figure 3 illustrates the graphs.

In almost 60% of the cases, the most integrated spaces are corridors, regardless of which floor they were on. Integration is concentrated in through-only movement and the core of the composition tends to lie in transition spaces: from/to the exterior; from/to occupation rooms. In the remaining 40% of the cases the integration area is located in spaces used as transitional spaces such as the exterior and balconies. In the middle of the rank of integration are the rooms for the family life such as the kitchen, living rooms and bedrooms, which means that they are always close to all the others. The most segregated spaces are those used for the production and storage processes.

The houses in the Italian sample were classified according to their genotypes as shown and illustrated in Table 2.

Type 1 organizes the houses, keeping a configurational separation between the house itself and the '*rustico*'. This type is found in almost half the sample. Type 2 is the tree-like structure which characterizes the smallest part of the sample, the non-'*italica*'



FIGURE 2 – House plans of Italian houses.

Source: The authors (2015).

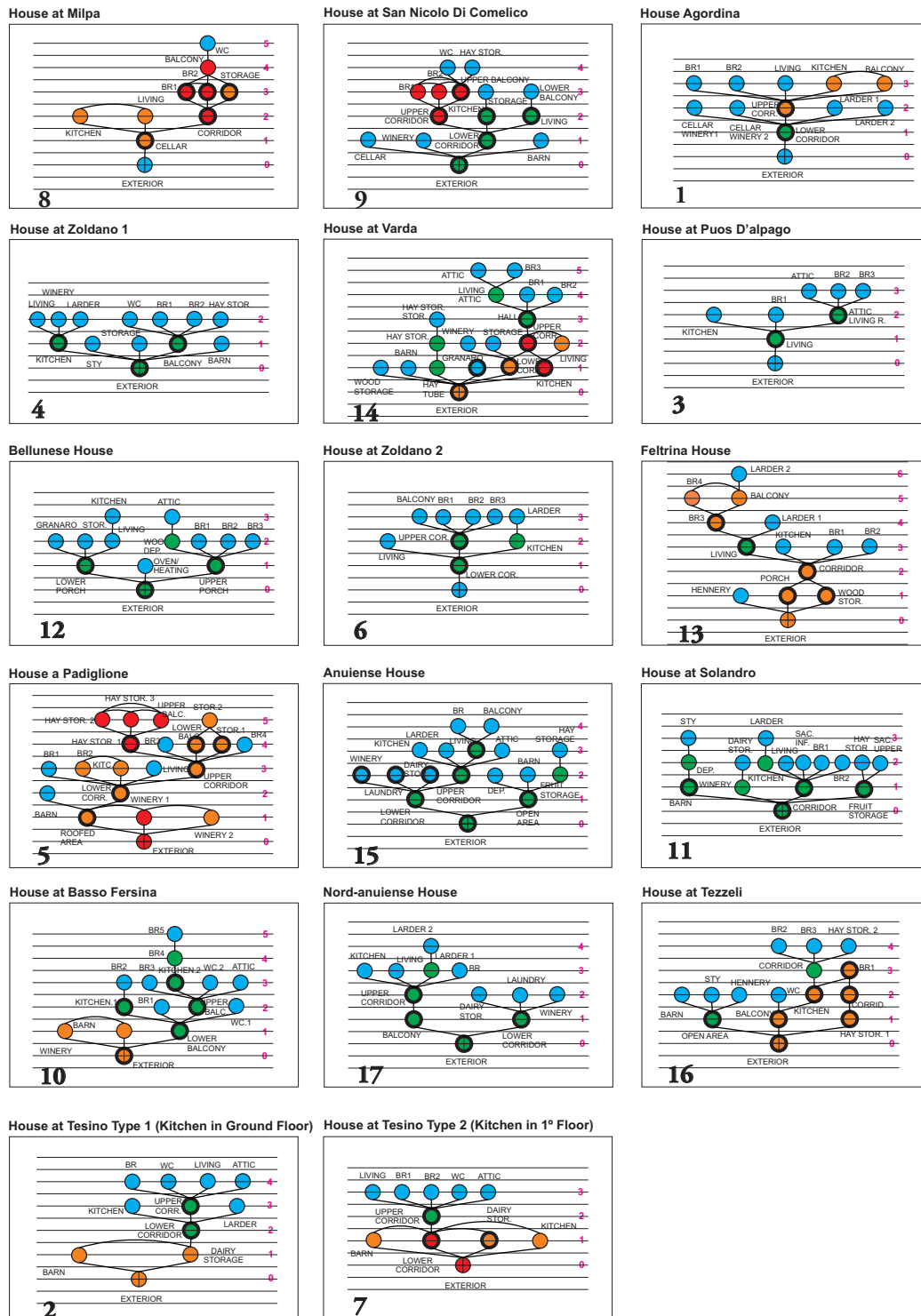
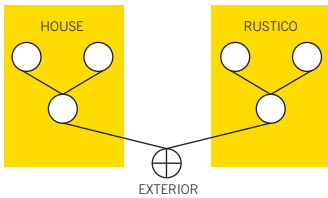
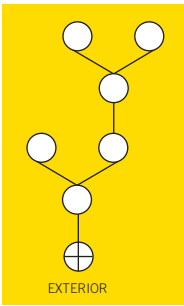
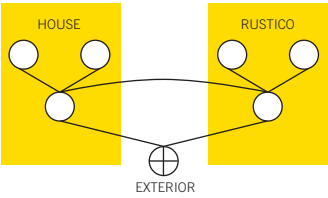


FIGURE 3 – Graphs of the Italian houses, from the exterior space according to space typology: a-type spaces in blue; b-type spaces in green; c-type spaces in orange, and d-type spaces in red.

Note: Numbers on the left classify the house according to its integration.

Source: The authors (2015).

TABLE 2 – The houses in the Italian sample according to their genotypes.

The houses	Belong to type	Main features of the type
House at San Nicolò di Comelico, House at Zoldano 1, House at Varda, Anaiense House, House at Solandro, House at Basso Fersina, Nord-Anuiense House, Bellunese House. (47.06%)	1) 	Tree-like structure; the exterior space as the connecting space between the house and the service area, which are spatially separated.
Agordina House, House at Puos d'Alpago, House at Zoldano 2. (17.65%)	2) 	Tree-like structure; increasing of depth from the exterior space; used in the non-'italica' houses.
House at Milpa, House a Padiglione, House at Tezzeli, House at Tesino 1, House at Tesino 2, Feltrina House. (35.29%)	3) 	House and service area separated and connected by the exterior space and both areas have a tree-like structure. There is a ring of movement that connects the house and the service area and the exterior space belongs to this ring.

Source: The authors (2015).

houses. Type 3 represents the more ring structure of part of the sample, with the exterior space always belonging to the ring and working as the connecting space between the house and the '*rustico*'.

A close exam of the Italian houses according to space typology shows that all houses present a common feature regarding the access from the exterior space and, therefore, in the way strangers are admitted into the house: a corridor, mostly 'b' or c-type spaces function as an area for movement to other spaces but never as a space for occupation.

The living room tends to be an a-type space, deeper in the layout of the houses, meaning that this room tends to be segregated in the composition, far from the exterior space and mostly related to the family life, which is not designed for receiving strangers. In two cases in the Trentino area — House at Basso Fersina and House at Tezzeli — there is no such space at all.

In the sample, no space within the houses mediate the relationships between residents and strangers and rites of passage do not find any kind of spatial flexibility to support their development.

These particularities produce a unitary structure of the house, configured by a tree-like shape, and represent a strict control over the space by the master of the house, which means that patriarchal families imprint social attributes in the way domestic space is arranged and works.

THE BRAZILIAN SAMPLE

All information about the Brazilian houses was based on a field survey conducted in the rural area of the municipality of *Bento Gonçalves*, in the state of *Rio Grande do Sul*, in 2012.

In Brazil different buildings separate the house itself from those used to store goods, food or shelter animals. The only common feature presented in all houses is the cellar with the winery. In this sense, the houses in the Brazilian sample do not belong to the '*italica*' house but to the '*masa*'.

The role of the living room is important in the layout and organization of the family life. In daily life, the door connecting the living room to the exterior space is kept closed; the structure of the house is more unitary and spatially supports the power of the head of the family. On rites of passage the door connecting the living room to the exterior space is open, admitting the entrance of strangers during the rites. On these occasions, the house as a whole is shallower and spatial control is less.

Due to this particularity and widespread way, the Italian immigrants in the South of Brazil used to organize the house layout in a different way than the Italian sample, the analysis of the Brazilian sample had to be done at two distinct moments: the first one, evaluated the structure of the houses during the rites of passage when the door connecting the living room to the exterior space remained open and, the second one, considered the daily family life when the door connecting the living room to the exterior space was kept closed. Differences were then analyzed and the comparative analysis with the Italian sample was made.

Figure 4 shows the house plans and the graphs of the houses are presented as they work with the door connecting the living room to the exterior either open, shown in Figure 5 or closed, shown in Figure 6.

Considering the open door connecting the exterior to the living room, the living room is the most integrated space in 65% of the cases, which is quite congruent with its role as the space responsible for receiving strangers. In the remaining 35% of the cases, the



FIGURE 4 – House plans in the Brazilian sample.

Source: The authors (2013).

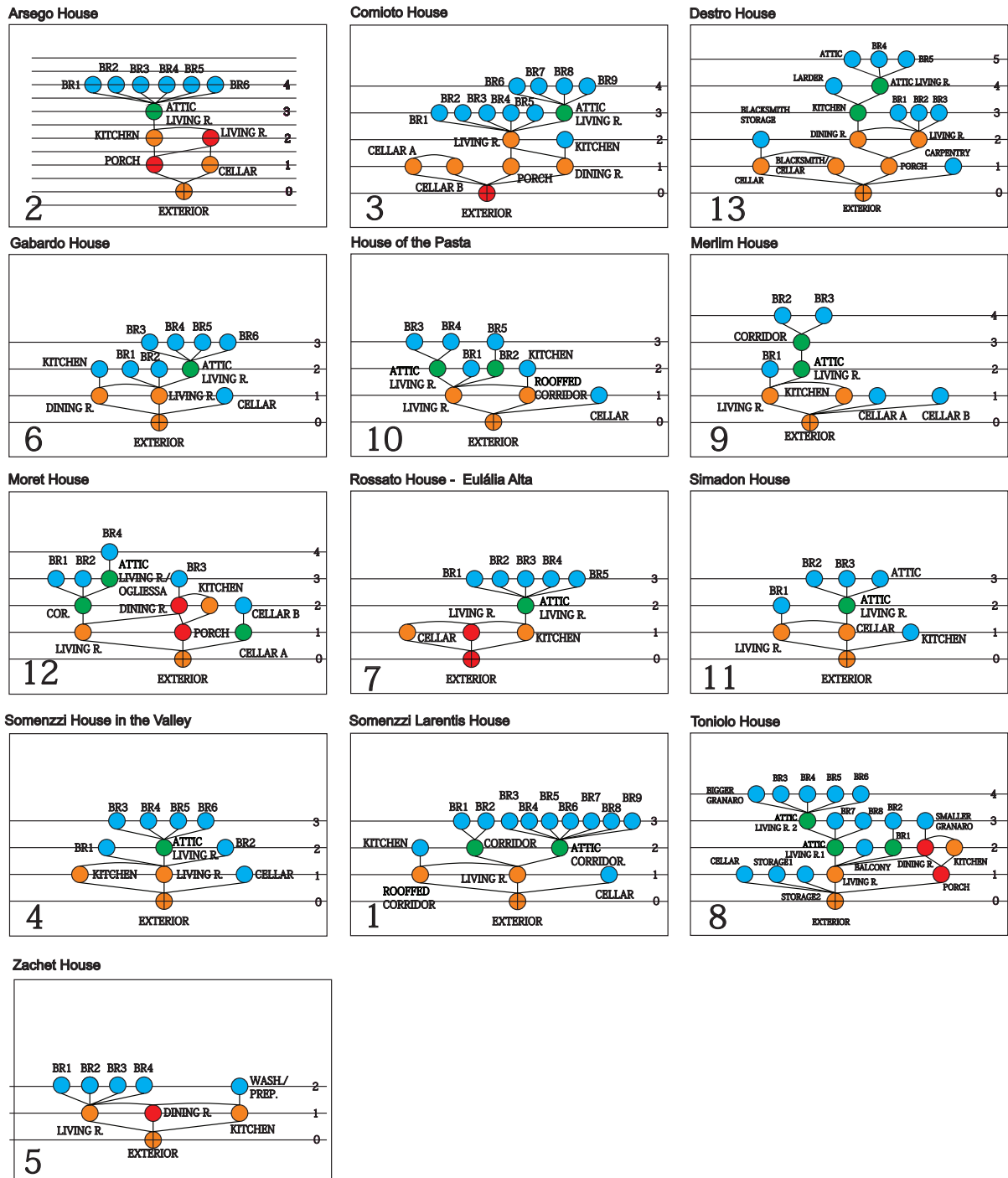
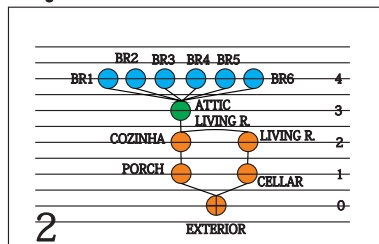


FIGURE 5 – Graphs of the Brazilian houses from the exterior space with the door connecting the living room to the exterior according to space typology: a-type spaces in blue; b-type spaces in green; c-type spaces in orange, and d-type spaces in red.

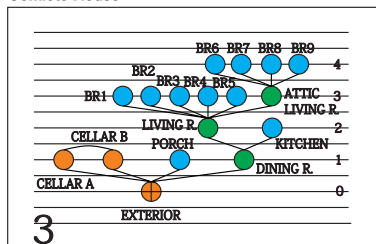
Note: Numbers on the left classify the house according to its integration.

Source: The authors (2015).

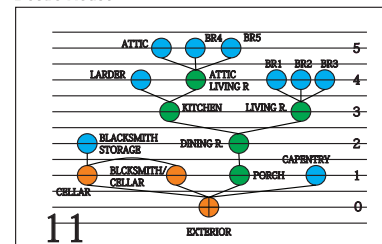
Arsego House



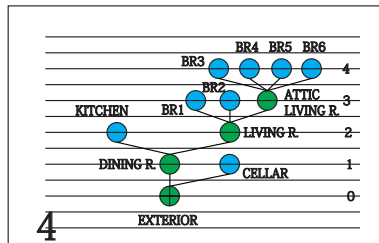
Comioto House



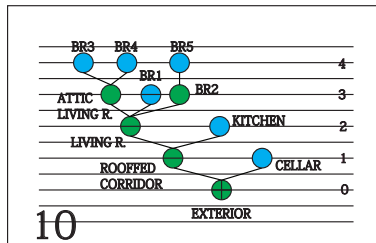
Destro House



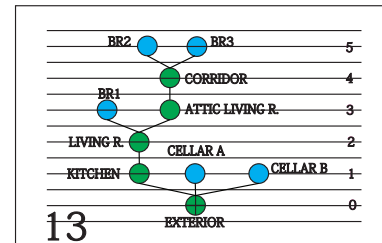
Gabardo House



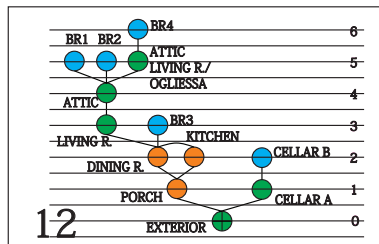
House of the Pasta



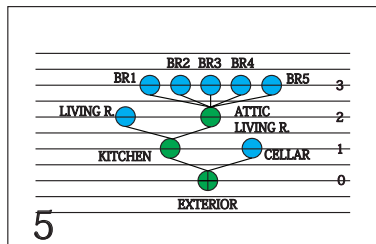
Merlim House



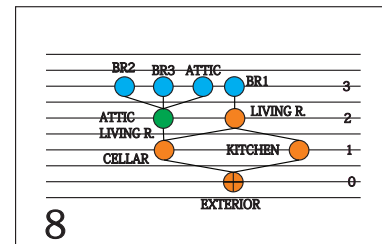
Moret House



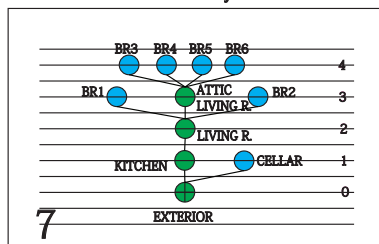
Rossato House - Euália Alta



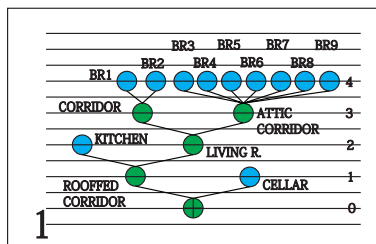
Simadon House



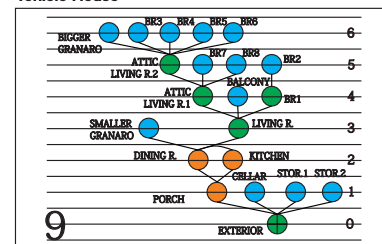
Somenzzi House - In the Valley



Somenzzi Larentis House



Tonlolo House



Zachet House

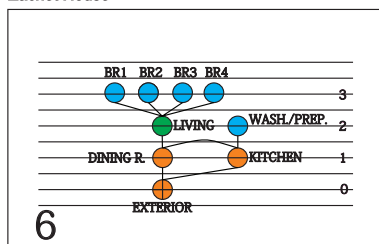


FIGURE 6 – Graphs of the Brazilian houses from the exterior space with the closed door connecting the living room to the exterior according to space typology a-type spaces in blue; b-type spaces in green; c-type spaces in orange, and d-type spaces in red.

Note: Numbers on the left classifies the house according to its integration.

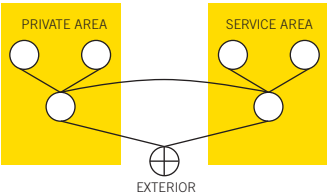
Source: The authors (2015).

most integrated spaces were: attic living room, dining rooms, and corridors. It is possible to infer, in this case, that integration tends to be concentrated in spaces responsible for the transition between the exterior and the space inside the house directly connected to the exterior which is the living room. This kind of spatial organization allows the rites of passage to be spatially mediated by the living room, connecting it directly to the exterior space in a shallower and more controlled structure without the need to use the rest of the house for the interaction of the family with strangers. This solution does not jeopardize the private life of the family, because more private spaces such as the bedrooms are always further away in the composition. The relationship between the living room and the exterior space is an important strategy to welcome strangers into the house and, at the same time, keeping the rest of the house apart from and controlling the movement of strangers.

The closing of the door connecting the exterior to the living room changes the spatial organization of the houses and the relative role of the spaces. Now, the living room is also the most integrated space in approximately 57% of the cases, but the special and central role of the living room is related to the way it is used to move from/to the private part of the house and therefore, how it organizes the whole configuration. In the remaining 43% of the cases the most integrated spaces are those related to the family life such as the attic living room, dining room, bedrooms and cellar.

When the door connecting the exterior space to the living room is closed, the house becomes less integrated, more introverted and the relationship between spatial organization and the daily life of the family is prioritized through the house layout and possible interactions with strangers diminishes. The control over the house still remains strong and spatially supported by the way the configuration is adjusted depending on the different requirements for the family life. Table 3 shows the genotype found in the Brazilian sample.

TABLE 3 – Genotypes and their features with the door connecting the exterior space and the open living room.

Houses	Type	Main features of the type
Arsego House, Comioto House, Destro House, Gabardo House, House of the Pasta, Merlim House, Moret House, Rossato House — Eulalia Alta, Simadon House, Somenzzi House — in the Valley, Somenzzi Larentis House, Toniollo House and Zachet House.		There is at least one ring of movement, connecting the exterior space, the service and the private areas of the house through the living room; the living room organizes and controls the private area of the houses, which have a tree-like structure; the living room connects different parts of the house.

Source: The authors (2013).

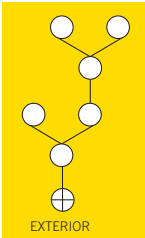
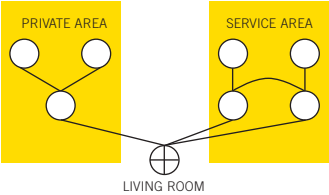
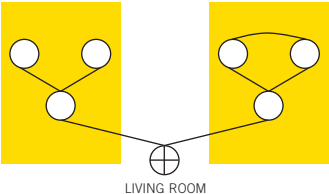
In this case, all the houses can be assigned to only one genotype, which means that all the houses function basically in the same way.

When the door connecting the exterior space to the house through the living room is closed, the configuration of the house changes, resulting in a tree-like structure. When a ring of movement is found, the living room does not belong to the ring but it is at least one step far from it, making the whole structure deeper regarding the exterior space, reinforcing the internal importance of the living room for the daily life of the family. Porches and roofed corridors become transitional spaces between the exterior and the interior of the houses and they are usually connected by the kitchen or the dining room, which are part of the service area.

The living room is important for the distribution of the activities inside the house and tends to separate the configuration into a private area consisting of the bedrooms, attic living room, and the service area consisting of the kitchen and dining room, where the transitional spaces to the exterior tend to be.

The distribution of the houses according the genotypes is shown in the Table 4, including their main features.

TABLE 4 – Genotypes and their features with the door connecting the exterior space and closed living room.

Houses	Belong to type	Main features of the type
Comioto House, Destro House, Gabardo House, House of the Pasta, Merlim House, Rossato House — Eulália Alta, Somenzzi House — in the Valley, Somenzzi Larentis House. (61.5%)	1) 	Tree-like structure; the living room as the central element of the configuration, connecting private and service areas of the house. The exterior space is always connected to the living room through a service room — kitchen or dining room.
Arsego House, Simadon House. (15.5%)	2) 	There is one ring of movement and the living room belongs to the ring; the living room organizes and controls the private part of the houses, which has a tree-like shape; the living room connects different parts of the houses through an intermediary space.
Moret House, Toniollo House, Zachet House. (23%)	3) 	There is one ring of movement, and the living room does not belong to the ring. The living room is at least one step far from the ring; the living room organizes and controls the private part of the house with a tree-like shape; the living room connects the private and service areas of the houses.

Source: The authors (2013).

The ring structure found in all houses in the first case is replaced by tree-like structure in most houses when the houses are spatially organized for the daily life of the families. Excluding the second genotype, which somehow reproduces the common genotype described in Table 3, it is possible to observe that in more than 84% of the houses the configuration reinforces the relations within the family members and the interaction with strangers is kept spatially related to rooms of the service area of the house and not with the living room, as it used to be in the first case.

The spatial flexibility, which allows the same house to fulfil different purposes, is obtained by using a quite simple but very effective spatial strategy. By opening or closing the connection between the exterior and the living room, which is the space responsible for both the reception of strangers and the internal organization of the house, it is possible to control access and circulation of strangers during rites of passage.

SPACE TYPOLOGY WITHIN THE SAMPLES

The space typology within the samples, as shown in Figures 3, 5 and 6, shows the different potential of spaces for movement or occupation.

In the Italian sample, in approximately 41% of the houses, there are only a- and b-spaces which means that those houses are based on a tree-like structure and sequences of spaces where movement from one space to all the others must go through and return in the same sequence of spaces. This structure maximizes depth and tends to produce segregation, which can be seen in the rank of most of these b-complexes houses shown in Figure 3. Movement is strongly concentrated in transitional spaces such as corridors and balconies — the b-type spaces — with a more linear geometry and controlling access and egress to/from the occupation spaces — a-type — which are connected into these b-space sequences.

In the other part of the sample, approximately 30%, there are a-, b- and c-type spaces, and in another 30% the four types of spaces are found. In two cases, rings including d-type spaces have bedrooms in their passages superimposing the same spaces for global movement and local occupation, which is not the ordinary way bedrooms function. In other cases, these rings connect transitional spaces or spaces belonging to the '*rustico*', which are working places or storages. The ring structure, when found, tends to be used in the service area of the building and the house tends to follow a tree-like structure.

In the Brazilian sample, when the door to/from the living room is open, all the houses present rings as alternative of movement, most of them based on c-type spaces, and the exterior space and living room are always part of these rings. The living room, as a space for the reception of strangers during the rites of passage and a space that controls the private area of the house, is at the same time a space for strangers and for the movement of residents.

In the daily life of the family, the door connecting the exterior space to the living room is kept closed, which changes the spatial complex of the house. There are no d-type

spaces and the ring structure in half the sample gives rise to tree-like structures where only a- and b-type spaces are found. This is very similar to what happens in the Italian sample, with sequences of b-type spaces articulating the a-type occupation spaces. In the other half of the sample, even if the ring structure is maintained, the rings are all c-type spaces, meaning that movement becomes more constrained and therefore, more suited for control in a patriarchal family. The more open structure found in the previous case only exists when strangers are admitted and the rites of passage take place. Another important feature is that the living room is almost always apart from the rings, becoming a b-type space and mainly as an area for movement to organize the family life.

CONCLUSION

INNOVATIONS OR REPRODUCTION?

a) House typology: The main differences between the Italian and Brazilian rural houses are closely related to production. In Italy, rural houses are mostly urban-like structure, detached from the farmland, and individual houses are rare. In Italy most of the rural houses are '*italica*', while in Brazil the separation between buildings for the family home and for the work is prevalent.

b) Layout organization: In Brazil, the same houses are used either for the reception of strangers on liminal events, when the structure is a ring-like shape, or the daily life of the family, when the house maintains a tree-like structure with a more unitary control, as required for a patriarchal family. The tree-like structure is also the prevailing genotype found in the Italian sample, although the spatial flexibility as described in the Brazilian houses is not found. In this sense, the spatial structure of the Brazilian houses reproduces the basic structure of the Italian houses, which means that not only the structure that is present in the samples resembles each other, but more importantly, the domestic spatial organization of Brazilian houses reproduces the spatial requirements for the kind of social structure that the first immigrants brought to Brazil.

c) The house as social representation: One of the differences between the Italian and Brazilian houses seems to be related to the role of the spaces in the houses. In Italy, the layout tends to be more rigid and the connection with the exterior space is always through a corridor and never through another kind of room. Access to the house is through an area for movement and not for occupation and there are no special spaces to receive strangers next to the exterior. The living room is always far from the exterior space and it is basically used for the family life. The layout flexibility found in the Brazilian houses allows the mediation between the exterior and interior spaces and therefore between strangers and residents by controlling access. Basically, the Brazilian houses function similarly to the Italian houses in a tree-like structure, with high internal spatial control and the relationship between the exterior and the house is always mediated by threshold spaces such as

porches, roofed corridors or a service part in the house such as the kitchen/dining room. In this case, the living room is an area for movement to/from the bedrooms and the connecting area to/from the service part of the house. In the other case, during rites of passage, the living room is open to the exterior space and strangers are welcomed. Now, the living room is closer to the exterior, it is the space for social representation of the family and this role is reinforced by special furniture. This innovation introduced in Brazil seems to consider the houses for the production, but also as part of social representation. In Italy, the living room is an introverted space that plays a secondary role concerning the composition. The living room is always far from the exterior and in 60% of cases it is an a-type space, which means that as a dead-end space it tends to lie deeper in the composition and used only for to-movement. In the Brazilian houses the living room is never a dead-end space, always within the sequence of spaces in the form of b-, c- or as part of rings, as a d-type space.

d) Space typology: The tree-like structure which is prevalent both in the Italian sample and in the daily life of the Brazilian families produces spatial complexes based on a- and b-type spaces. In transitional periods, the Brazilian sample is based on a ring structure where c- and d-type spaces are part of the complexes by adding a connection between the exterior space and the living room during rites of passage. Bedrooms are, in almost all cases, a-type spaces and therefore, spaces for occupation. Exceptions are found when the father's bedroom is a b-type space and a passage for the small children's bedroom, when it is a dead-end and a more controlled space. Transitional b-type spaces such as corridors tend to be only an area for movement in the Italian sample, but in the Brazilian sample these b-type spaces are simultaneously an area for movement and spaces for occupation, including the living room, attic living room, and dining room. The use of corridors in the Brazilian sample is quite rare. The c- and d-type spaces, which are by definition the natural attractors of movement, are found in the Italian sample with bedrooms in these type of rings, becoming transitional spaces and superimposing their role as occupation and areas for movement. This feature is not found in the Brazilian sample where the functions and parts of the houses are separated in a more strict way.

NOTAS

1. The houses: at Milpa; at San Nicolò di Comelico; Agordina; at Zoldano 1; at Zoldano 2; at Varda.
2. The houses: a Padiglione; Anuiense; at Solandro; at Basso Fersina; Nord-anuiense; at Tezzeli; at Tesino Type 1: Kitchen on ground floor; at Tesino Type 2: Kitchen on the first floor.
3. The houses: Bellunese; at Puos d'Alpago.

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Recebido em
24/11/2015,
reapresentado
em 19/5/2016
e aprovado em
20/6/2016.

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